

We claim:

1. A high-volume, high-utility, non-conductive enclosure for electrical components and wiring comprising: a molded polymer junction box including a non-perforate back wall, and plural non-perforate contiguous walls extending generally perpendicularly to said back wall, and each one of said plural contiguous walls joining integrally to the back wall and also to adjacent ones of said plural contiguous walls, said back wall and said plural contiguous walls cooperatively defining a chamber within said junction box, with said plural contiguous walls at respective end edges cooperatively forming an opening to said chamber, at least one of said plural contiguous walls carrying an integral mounting lug member extending across said opening, and said mounting lug member also extending inwardly of said chamber from substantially said end edge of said at least one wall toward but short of said back wall to define a termination surface, whereby an electrical component may be inserted via said opening into said chamber to be secured within the junction box at said mounting lug.
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2. The enclosure of Claim 1 wherein said one wall defines a wall portion extending from said termination surface to said back wall, whereby said wall portion provides a wall surface within said junction box for receiving a conduit socket.
3. The enclosure of Claim 2 wherein at least a selected one of said plural contiguous walls carries on an outer surface thereof a drilling indicia for positioning a conduit socket.
4. The enclosure of Claim 3 wherein said at least selected one of said plural contiguous walls carries plural drilling indicia, and each one of said plural drilling indicia are further spaced from each of: an inner surface of said back wall, and from an inner surface of an adjacent one of said plural contiguous walls by a determined distance, and are spaced from an adjacent drilling indicia by twice said determined distance.
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5. The enclosure of Claim 4 further including a nut member threadably engageable with a conventional conduit socket member, said nut member providing plural flats each substantially at a radius of said determined distance, and which plural flats when said nut member is centered substantially at one of said plural drilling indicia are engageable with one of:
5 said inner surface of said back wall, with said inner surface of an adjacent one of said plural contiguous walls, or with a confronting flat of an adjacent nut member which is also centered at an adjacent drilling indicia; whereby, said nut member engages one or more of said inner wall surfaces and another nut member to substantially prevent said nut member from rotating when a conduit socket member is tightened into said nut member.

6. The enclosure of Claim 5 wherein said nut member comprises:

a nut member body of injection molded plastic, the nut member body internally defining a through bore, and externally defining surface features allowing the nut member body to be grasp with a gripping or wrenching tool;

said nut member body also defining within said through bore a single female helical thread having circumferentially opposite thread ends, said opposite thread ends being spaced slightly from one another circumferentially and not overlapping one another in the circumferential direction so as to define an axially extending gap

7. The enclosure of Claim 6 wherein said nut member external surface features include plural wrenching flats.

8. The enclosure of Claim 6 wherein said nut member external surface features include plural axially extending ribs.

9. The enclosure of Claim 1 wherein said mounting lug cantilevers from said at least one of said plural contiguous walls.

10. The enclosure of Claim 9 wherein said at least one of said plural contiguous walls carries plural mounting lugs integrally joining with said at least one wall.

11. The enclosure of Claim 10 wherein said plural mounting lugs each cantilevers from said one of said plural contiguous walls.

12. The enclosure of Claim 11 wherein each of said plural mounting lugs is independent of each other mounting lug of said plural mounting lugs.

13. The enclosure of Claim 11 further including an elongate web member extending transversely of said junction box, and said web member integrally joining with each of said plural mounting lugs.

14. The enclosure of Claim 13 wherein said web member has a pair of opposite ends, and said web member further joins integrally at each of its opposite ends with respective ones of said plural contiguous walls.

15. A molded non-conductive plastic junction box comprising a back wall and four contiguous integral side walls each joined both to the back wall and to two adjacent ones of the four contiguous side walls, said four contiguous side walls being disposed in spaced apart opposite pairs, said back wall and four side walls cooperatively bounding a chamber within said junction box, and each side wall terminating at an end edge substantially in a common plane to cooperatively define an opening to said chamber, and one of said four contiguous side walls carrying an integral mounting lug extending from said one side wall toward the opposite one of said side walls, said mounting lug also extending from substantially said common plane toward but short of said back wall, and said one wall providing a wall portion extending from said mounting lug to said back wall which is unobstructed and available for mounting of a conduit socket therein, whereby said junction box provides increased interior volume and increased wall area for the mounting of conduit sockets.

16. The junction box of Claim 15 wherein said back wall and said four side walls are non-perforate, whereby said back wall and each of said four side wall each have no openings though which to connect a conduit socket.

17. The junction box of Claim 15 wherein at least one of said four side walls includes outwardly disposed drilling indicia, said drilling indicia being spaced from an inside surface of said back wall, and from an inside surface of an adjacent one of said four side walls by a determined distance.

18. The junction box of Claim 17 further including a nut member threadably engageable with a conventional conduit socket member, said nut member providing plural flats each substantially at a radius of said determined distance, and which plural flats when said nut member is centered substantially at one of said plural drilling indicia are engageable with one of: said inner surface of said back wall, with said inner surface of an adjacent one of said four side walls, or with a confronting flat of an adjacent nut member which is also centered at an adjacent drilling indicia; whereby, said nut member engages one or more of said inner side wall surfaces and another adjacent nut member to substantially prevent said nut member from rotating when a conduit socket member is tightened into said nut member.

19. The junction box of Claim 15 wherein said mounting lug cantilevers from said one of said four side walls.

20. The junction box of Claim 19 wherein said one side wall carries plural mounting lugs integrally joining with said one side wall.

21. The junction box of Claim 20 wherein said plural mounting lugs each cantilevers from said one side wall.

22. The junction box of Claim 21 wherein each of said plural mounting lugs is independent of each other mounting lug of said plural mounting lugs on said one side wall.

23. The junction box of Claim 21 further including an elongate web member extending transversely of said junction box, and said web member integrally joining with each of said plural mounting lugs on said one side wall.

24. The junction box of Claim 23 wherein said web member has a pair of opposite ends, and said web member further joins integrally at each of its opposite ends with a side wall extending angularly to said one side wall.

25. A method of providing a non-conductive plastic junction box with conduit sockets, said method comprising steps of

providing the junction box with a back wall and at least four contiguous integral side walls each joined both to the back wall and to two adjacent ones of the at least four contiguous side walls;

disposing said at least four contiguous side walls in spaced apart opposite pairs;

utilizing said back wall and said at least four side walls to cooperatively bound a chamber within said junction box;

providing and each of said at least four side walls with a terminating end edge substantially in a common plane, and employing said end edges to cooperatively define an opening to said chamber;

providing on one of said at least four contiguous side walls an integral mounting lug extending from said one side wall toward the opposite one of said side walls and from substantially said common plane toward but short of said back wall; and

15 inwardly of said mounting lug, utilizing said one side wall to provide a wall portion extending from inwardly of said mounting lug to said back wall, which wall portion is unobstructed and available for mounting of a conduit socket therein;

whereby said junction box provides both increased interior volume and increased side wall area for the mounting of conduit sockets.

26. An electrical junction box having plural walls cooperatively arranged and interconnected so as to substantially bound a volume and to define an opening to said volume by which

electrical components and electrical wiring may pass into and from said volume; at least one wall of said plural walls of said junction box defining an insert recess opening outwardly from said 5 volume, whereby said insert recess may receive a matchingly configured insert member which provides for joining to said junction box of at least one electrical conduit at an end termination portion thereof.

27. The junction box of Claim 26 wherein said insert recess includes a larger sized portion opening outwardly on said junction box, and a smaller sized portion opening inwardly of said junction box to said volume, said larger sized portion and said smaller sized portion communicating with one another to provide an outwardly disposed shoulder within said insert 5 recess.

28. The junction box of Claim 26 wherein said insert recess has a selected shape in axial view.

29. The junction box of Claim 28 wherein said selected shape is selected from the group consisting of: rectangular, square, oval, semicircular, and bi-cameral.

30. The junction box of Claim 29 wherein said selected shape is bi-cameral, and is symmetrical in axial view and includes a pair of semicircular recess portions arranged in mirror image to one another.

31. A method of providing an electrical junction box, said method comprising steps of:

providing plural walls for said junction box, and cooperatively arranging and interconnecting said plural walls so as to substantially bound a volume;

5 utilizing an end edge of selected ones of said plural walls to cooperatively define an opening to said volume by which electrical components and electrical wiring may pass into and from said volume;

utilizing at least one wall of said plural walls of said junction box to define an insert recess, and
configuring said insert recess to open outwardly from said volume, whereby said insert recess
10 may receive a matchingly configured insert member which provides for joining to said junction
box of at least one electrical conduit.

32. The method of Claim 31 further including the steps of providing for said insert
recess to include a larger sized portion opening outwardly on said junction box, and a smaller
sized portion opening inwardly of said junction box to said volume, and utilizing said larger
sized portion and said smaller sized portion to provide an outwardly disposed shoulder within
5 said insert recess.

33. The method of Claim 32 further including the step of providing for said insert
recess to have a selected shape in axial view.

34. The method of Claim 33 including the step of selecting said selected shape from
the group consisting of: rectangular, square, oval, semicircular, and bi-cameral.

35. The method of Claim 34 including the step of choosing said selected shape to be
bi-cameral, and configuring said bi-cameral shape to be symmetrical in axial view and to include
a pair of semicircular recess portions arranged in mirror image to one another.

36. An insert member for use in combination with an electrical junction box, said
insert member including a body portion of selected configuration in end view, and at least one
boss member extending from said body portion, said body portion and said boss member
cooperatively defining a stepped through bore opening outwardly on said boss member and
5 extending axially in said boss member and body portion and opening through said body portion,
said stepped through bore providing a socket for receiving an end portion of an electrical conduit.

37. The insert member of Claim 36 wherein said insert member provides a pair of
boss members and a corresponding pair of conduit sockets in side by side relationship.

38. The insert member of Claim 36 wherein said body portion has a center line in side elevation view, and said boss portion similarly has a center line in side elevation view, and the respective centerlines of said body portion and of said boss member being in a selected relationship to one another.

39. The insert member of Claim 38 wherein said selected relationship of said centerlines of said boss member and of said body portion is selected from the group consisting of: substantially aligned with one another in side elevation view, and offset from one another by a determined amount in side elevation view.

40. An insert member for use in combination with a pair of electrical junction boxes, said insert member providing for joining of said pair of electrical junction box in to a ganged pair or plurality of junction boxes, said insert member including a body portion of selected configuration in end view, and a pair of boss members extending in opposite directions from said body portion, said body portion and said boss members cooperatively defining a through passage opening outwardly on each of said pair of boss members and extending axially in said boss members and body portion.

41. The insert member of Claim 40 wherein said through passage is generally rectangular in axial view.

42. A conduit coupling defining a pair of oppositely extending conduit sockets each providing for adhesively receiving an end portion of a run of conduit, said conduit coupling further including an exterior boss providing a mounting surface extending parallel to the axis of the coupling, and provision for receiving and retaining a spacer member disposed between said exterior boss and a surface upon which said conduit coupling is attached.

43. The conduit coupling of Claim 42 wherein said provision at said boss includes a pair of parallel mounting pins.

44. The conduit coupling of Claim 43 wherein said pair of parallel mounting pins each define one or more clipping necks at which the length of the pins may be conveniently shortened by cutting or clipping.

45. The conduit coupling of Claim 42 and further a tab member including a pair of holes spaced apart to match with and be received over the pair of mounting pins to rest upon the surface of the boss.

46. An electrical junction box having plural walls cooperatively arranged and interconnected so as to substantially bound a volume and to define an opening to said volume by which electrical components and electrical wiring may pass into and from said volume; a back one of said plural walls outwardly and at respective corners of the junction box defining respective ones of plural corner recesses, each corner recess including a recess floor bounded by a pair of recess side walls which intersect with the floor and with each other at substantially a right angle, and a locating member centrally located of each of said plural corner recesses and projecting upwardly in this recess perpendicularly to the back wall.

47. The electrical junction box of Claim 46 wherein said locating member is configured as a pin member round in cross section, and providing for receipt into said corner recess of a mounting member in a selected one of plural alternative orientations.

48. The electrical junction box of Claim 47 wherein said mounting member includes an elongate tab member received into a corner recess and upon said mounting pin, said tab member defining a locating hole received over said mounting pin, and plural end edge surfaces disposed about said locating hole and which intersect at 45 degree angles to one another and to the length of said elongate mounting tab, whereby said mounting tab may be adhesively secured into said corner recess in any one of three alternative positions each disposed at 45 degrees to the other, and said mounting tab may extend outwardly of said junction box to provide for fastening of said junction box to underlying structure.
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49. A mounting tabs providing for adhesive installation into a recesses of a junction box, said mounting tab being elongate and including three end edge surfaces each disposed at an effective angle of 45 degrees relative to the adjacent end edge surface.

50. A method of mounting an electrical junction box, said junction box having plural walls cooperatively arranged and interconnected so as to substantially bound a volume and to define an opening to said volume by which electrical components and electrical wiring may pass into and from said volume; said method including steps of:

5 providing at a back one of said plural walls of said junction box and at respective corners thereof respective ones of plural corner recesses, configuring each corner recess to include a recess floor bounded by a pair of recess side walls which intersect with the floor and with each other at substantially a right angle, and providing a locating member centrally located of each of said plural corner recesses and projecting upwardly in this recess perpendicularly to the back wall.

10 51. The method of Claim 50 further including steps of configuring said locating member as a pin member round in cross section, and providing for receipt into said corner recess of a mounting member in a selected one of plural alternative orientations.

52. The method of Claim 51 further including steps of providing a mounting member configured as an elongate tab member which is received into a corner recess and upon said mounting pin, providing for said tab member to define a locating hole received over said mounting pin, and providing said tab member with plural end edge surfaces disposed about said 5 locating hole and which intersect at 45 degree angles to one another and to the length of said elongate mounting tab, whereby said mounting tab may be adhesively secured into said corner recess in any one of three alternative positions each disposed at 45 degrees to the other, and said mounting tab extends outwardly of said junction box to provide for fastening of said junction box to underlying structure.